MAGISTERARBEIT

Titel der Magisterarbeit

„A survey of the relationship between Corporate Governance and Corporate Value“

Verfasser

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angestrebter akademischer Grad

Magister der Sozial- und Wirtschaftswissenschaften (Mag.rer.soc.oec.)

Wien, im September 2009

Studienkennzahl lt. Studienblatt:	A 066 915
Studienrichtung lt. Studienblatt:	Magisterstudium Betriebswirtschaft UG 2002
Betreuer:	ao. Univ.-Prof. Dr. B. Burcin Yurtoglu

I. Eidesstättige Erklärung

Ich erkläre hiermit an Eides Statt, dass ich die vorliegende Arbeit selbstständig und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht. Die Arbeit wurde bisher in gleicher oder ähnlicher Form keiner anderen Prüfungsbehörde vorgelegt und auch noch nicht veröffentlicht.

Wien, am 5. 9. 2009

(Arno Unterguggenberger)

II. Acknowledgement

I herewith want to thank Univ.-Prof. Dr. B. Burcin Yurtoglu, who accepted the proposal for my thesis's topic from the first moment and guided me through the whole work's process with a considerable amount of patience, knowledge and some critical, but constructive, remarks. Furthermore, I thank my parents Sylvia and Silvio Unterguggenberger for their continuous support throughout my whole studies and for the love they share with me every day. Last but not least, I want to thank my younger brother, Ivo Unterguggenbeger, who sacrificed some nights by discussing and re-reading my thesis with me.

III. Abstract

Der Zweck der vorliegenden Magisterarbeit war es zu ergründen, ob ein Zusammenhang zwischen der Corporate Governance und der Unternehmensleistung bzw. dem Unternehmenswert besteht. Dazu wurden im Laufe dieser Arbeit zuerst wichtige Methoden der Unternehmensbewertung im Einzelnen betrachtet, um sich dann genauer den vielfältigen Faktoren der Corporate Governance zu widmen. Dabei wurden die jeweiligen theoretischen Ansätze, die dazugehörige wissenschaftliche Literatur, sowie auch die Probleme der einzelnen Bereiche betrachtet. Es wird bezweifelt, dass es zurzeit, auf Grund der vielen unterschiedlichen Auffassungen und Meinungen, sinnvoll ist, voreilig einen Schluss über den Zusammenhang von Corporate Governance und Unternehmensleistung zu ziehen. Es kann nämlich für Unternehmen, welche sich nur aus Gründen der Marktattraktiviät den Weisungen und Standards diverser Rating Agenturen unterwerfen, sehr schnell, ein für die Aktionäre nachteiliger Effekt einstellen, da in diesem Gebiet noch keine profunden, wissenschaftlichen Erkenntnisse vorliegen.

It was the intention of this thesis to investigate if a relation between Corporate Governance and Corporate performance exists. For that reason I provided a separate overview of the two subjects in order to get insight into the complexity, the theoretical foundations and the problems, which each subject involves. It is doubtful that any specific inference about an existing relationship of corporate governance and corporate performance is appropriate at the present. There are still too many unresolved questions and problems, which need to be re-examined closely. Companies need to be very careful if they decide to adapt to Corporate Governance guidelines, which rating agencies or others provide. The adaption to these guidelines will most certainly entail adverse effects for the company’s shareholders because they are not a scientifically proven yet. It is possible that each company requires the application of its own corporate governance measures to achieve an optimal firm performance. A generalization is simply not possible.

IV. Contents

1. Introduction

1.1 Motivation - Outline of the Thesis

The main intention of this thesis is to investigate if corporate governance exerts influence on corporate value respectively performance. It will depict a possible model for the analysis, determine and explain the relevant factors and finally give a critical comment. The model and the derivation of the determined input factors are based on recent economic publications and today's literature. Furthermore it will try to give insight into essential economic questions and theory, which arise along with the main subjects.

The question, if corporate governance exerts influence on corporate value, arises due to a manifold set of expectations imposed by shareholders, possible investors and other stakeholders on the management of a company. Additional information is needed, in order to overcome the asymmetric information, which exists between the parties and which leaves a large space for adverse managerial behavior. This managerial behavior will as a consequence destroy shareholder respectively corporate value.

The purpose of finding correlations is to provide the involved parties with additional information, so that they gain an advantage in their decision making and overcome the existing information gap that exists between them.

In order to provide the needed information economists are engaged ever since to determine factors, which exert influence on each other. For an economic purpose it is not just sufficient to determine a factor and its relevance but it is also necessary that some coherence is found and that it can be statistically or empirically supported. That is to say, others must be able to reproduce the finding and thus be able to acknowledge it.

Some researchers propose to make use of a linear regression analysis in order to identify a possible impact of the relevant determinants. Their proposal will be used as a basic model. At a first glance these determinants can be derived quite easily by the nature of the question at issue. The significant factors can be identified as corporate value or performance on the one hand and the firm's governance level on the other hand.

Corporate value can be computed in many different ways, depending on the purpose of valuation such as sale or purchase of a company, tax reasons, credit ratings and much more. As the purposes might differ, the reasoning is the always the same, namely to find a basis for an economic decision. The most common valuation approaches in theory as well in practice will be shown here.

The necessity for Corporate Governance can be found in today's separation of ownership and control within corporations. This so called principal agent problem is based on asymmetric information that exists between the management and the shareholders. Since there are many factors involved concerning corporate governance it is not an easy task to find an appropriate measure representing governance level. These multiple factors provide fertile soil for criticism.

Therefore this thesis will consist of three main parts: The first part will deal with the theoretical concepts of corporate valuation in order to show how value can be derived. The second part will look closely at the issue of corporate governance, its historical development and why necessity emerged. The third part will put the pieces together and conclude by theoretical and empirical findings whether there is coherence between the value of a company and its applied corporate governance.

2. A MODEL FOR TESTING

2.1 Univariate Linear Regression

It is not sufficient to proceed on an assumption alone. Any assumption that is made needs to be proven and has to be replicable. Therefore it is an economist's task to detect and demonstrate relations. This can be achieved by the use of several statistical procedures.

A powerful tool in this context is the univariate regression analysis, which tries to explain a dependent variable through another independent variable.

Preparing for a regression includes three basic steps:

1. Drawing of a scatter plot
2. Performing the regression analysis
3. Interpreting the analysis

2.1.1 Scatter Plot

The first step in the process is to draw a scatter plot in order to get a first overview of the situation. By simply plotting the variables into a coordinate system, it is possible to observe, if a relationship exists at all. The observed coherence can be linear, exponential, logarithmic or something similar. This helps to decide whether it is appropriate to use a linear regression model or if one needs to apply a different model. Furthermore one should gain insight into how strong the coherence is and if there are any anomalies. Figure 2-1 shows an artificially created scatter plot with assumed linear coherence.

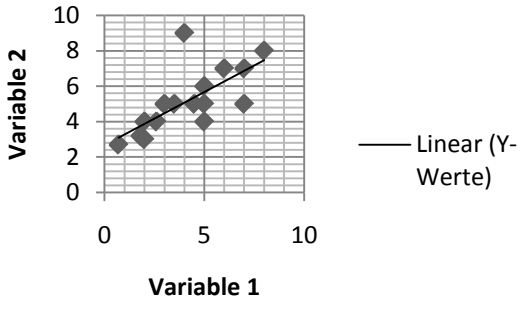


Figure 2-1: Scatter Plot

2.1.2 The Linear Regression Analysis

With linearity assumed in figure 2-1 we can proceed to the linear regression equation, which looks like the following:

$$y = \beta_0 + \beta_1 x + \varepsilon_i \tag{2.1}$$

Equation 2.1 represents a best fit line, which is created by the commonly used method of least squares.

The least squares method helps to compute the unknown regression coefficients β_0 and β_1. With the help of these coefficients we get a linear function which minimizes the sum of the squared distance of each individual data pair (x_i, y_i) from that line. Whereas ε_i is a term which is added for possible errors or dispersion.

$$\beta_0 = \frac{\sum_{i=1}^{n} x_i^2 \sum_{i=1}^{n} y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} x_i y_i}{n \sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2} \tag{2.2}$$

$$\beta_1 = \frac{n \sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{n \sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2} \tag{2.3}$$

2.1.3 Interpretation

Now that the regression line and its coefficients have been identified it needs to be verified that the correlation does not occur due to the randomness of the sample (positive autocorrelation). This can be achieved by formulating the following two hypotheses:

Hypothesis 1: $\beta_1 = 0$ Hypothesis 2: $\beta_1 \neq 0$

If Hypothesis 1 is fulfilled this would imply, according to $y = \beta_0 + \beta_1 x + \varepsilon_i$, that the term $\beta_1 x$ is equal to zero, thus the variable x does not explain y.

On the other hand if β_1 is different from zero, hypothesis 2 is fulfilled and it can be assumed that x helps to explain y.

In order to test the hypotheses correctly it needs to be assumed that the error terms ε_i are independent and normally distributed with an expected value of zero and that they possess a constant squared standard deviation σ_ε^2.

2.1.4 Causality and Endogeneity

The question of causality occupies philosophers and researchers ever since. Already Adam Smith (1776) in his work "An inquiry into the Nature and Causes of the Wealth of Nations" or the great philosopher and economist David Hume tried to deal with the issue of causality. Hume inspired economists by the thought that economics was a causal science; despite he doubted that one would ever know the ultimate causation. He stressed that any analysis has to consider two main implications of causality:

1. Causes are asymmetrical.
2. Causes are effective.

The first implication suggests, if X causes Y it does not require that Y causes X. The second implication suggests that it must be distinguished between causes, which occur randomly (accidental correlation) and causes, which are repeatedly correlated with certain effects.

In the 19th century researchers began to develop and enhance statistical distribution and correlation methods, which they tied closely to causality at that point in time.

In the 20th century statistical methods such as multiple correlations and regressions emerged from the endeavors, which started in the 19th century and were now associated with causality. The difference between the methods of the 19th and 20th century was that regressions had a perceivable direction. A regression of X on Y does not estimate coefficients which are inverse to the ones of a regression of Y on X. Therefore the direction of a regression should reflect the direction of causality. However, even though regressions seem to signal a direction, it is unclear from the data itself which direction is the correct one. This leads to the new problem of econometric identification. Facing this situation the question turns up of how to distinguish a supply curve from a demand curve in a data set? A solution to this issue is to search for other factors which exert influence on the initial factors. For example, demand and supply of air-conditions depend on its price. But as soon as other factors such as the price of inputs or the temperature are perceived, it is possible to identify supply and demand curve separately. Hence the identification problem can be solved with the help of simultaneous equations, which in return reduce the incumbent issue of causality.

It is too early to say where the 21st century will lead us, but certain steps into a new direction have already been taken.

Wintoki, Linck and Netter (2008) deal with the subject of dynamic endogeneity in the field of relating corporate governance (control forces) to corporate performance (financial decisions). They argue that the manifold factors of the control forces make it difficult to model a problem properly due to the possible endogenous relation among them. Therefore it is necessary to control for endogeneity. While controlling for endogeneity it is crucial to control if some of the observed factors are dynamic. This means in terms of corporate governance that current decisions might affect both future governance and performance, which in return might affect future decisions. They state that ignoring dynamic endogeneity will ultimately lead to flawed inferences.

In general endogeneity problems arise in cases where a presumed *correlation* between the *explanatory variable* and the *error term* exists. A correlation of the explanatory variable and the error term violates the assumptions of OLS regressions and leads to *inconsistent* or *biased* coefficient estimates.

It can be distinguished between *three* possible *sources,* which lead to endogeneity:

1. **Omitted variables** - Endogeneity induced by omitted variables implies that some necessary control variables have not been considered or are simply missing.
2. **Simultaneity** - The issue of simultaneity arises in the case when at least one of the explanatory variables is affected by the dependent variable. This is the main issue while regarding the relationship of Corporate Governance and Corporate Value. It is possible that Corporate Governance itself is a function of Corporate Value and vice versa.
3. **Measurement errors** - Measurement errors occur if the key explanatory variable is not clearly defined.

Especially, to identify one of these three cases, it is appropriate to test for endogeneity by making use of the *Hausman specification test* (1978). The basic idea of this test is to compare two estimators, whereas one estimator is both, consistent under the zero-hypothesis and the alternative hypothesis and the other estimator is only consistent under the zero hypothesis. A large difference between these two estimates serves as evidence for the alternative hypothesis. Hence endogeneity exists.

In the case of a potential endogenous variable a *first solution* to the problem could be to look for a suitable proxy, which is not endogenously related. One method to do so is to simply lag

the suspect variable by a specific period. The advantage of using a proxy is that it is very simple to implement and does not require too much additional data. Nevertheless, advantages bring their disadvantages. First, the major problem of this method is that it does not really solve the endogeneity problem, if the estimated relationship is assumed to exist over long periods of time. Second, the interpretation of the result becomes more difficult since the actual variable one is interested in is only resembled by another variable, the proxy. As a result one might suffer a loss of accuracy. Third, there is no possibility of empirically estimating how grave the endogeneity problem is and whether one used an appropriate way of solving it.

A *second solution* to the problem of endogeneity is to make use of *instrumental variables* (IV). The instrumental variable methods can be used in both, single equation models and simultaneous equation models. This method is efficient if one can determine instrumental variables which are correlated with the endogenous regressor but not correlated with the error term.

The IV estimation process involves:

1. The Selection of a set of exogenous variables
2. The conduct of a two-stage least squares (2SLS) estimation method

Assume a linear empirical model in which one regresses y_t on *k* independent variables x_t:

$$y_i = c + \sum_{i=1}^{k} \beta_i x_i + \epsilon_t$$

whereas ϵ_t is the term added for possible errors. It can be possible that the x_i are correlated with the residuals. This would clearly violate the OLS assumptions and lead to *inconsistent* or *biased* coefficient estimates. At this stage one has to find and apply instrumental variables which are correlated with the x_i but not the error term. Suppose that *n* of the *k* independent variables are correlated with ϵ and the others are exogenous. In order to get reliable results one needs at least *n* instrumental variables, which are exogenous. In case that the available number of instruments is less than *n* one is unable to remove all endogenous effects and the results will be unreliable again.

The selection of the instrumental variables is very critical because the choice of weak instruments, in connection with the question of endogeneity, will ultimately lead to an

inconsistent or weak result. The advantages of using instrumental variables are on the one hand, that the results are accurate and transparent and on the other hand that the results are amenable to empirical testing. It is possible to evaluate the appropriateness of instruments, the scale of endogeneity, etc.

A *third* and optimal solution to the question of endogeneity could be achieved through the use of the generalized method of moments (GMM), which was first introduced by Hansen (1982). This method requires a large set of data time series in order to be explanatory. A test for overidentifying instrumental variables (IV > n) was proposed by Sargan (1959). Nevertheless the biggest problem in applying the GMM to Corporate Governance is that Corporate Governance is a relatively young area and that no extended time series of data exist.

Cho (1998) among others, examined the relation between ownership structure, investment, and corporate value. He mainly focused on the subject whether ownership structure affects investment and therefore corporate value. His intention was to investigate if the findings of other researchers like Jensen and Meckling (1976) and Stulz (1988) that ownership structure affects corporate value, especially through the investments made, were correct. Morck, Shleifer and Vishny (1985) as well found a significant relationship of ownership structure and corporate value by using *Tobin's q* as an indicator for corporate value. Cho performed two types of regressions. First he used OLS regressions in order to find out if his results match the results of Meckling, Stulz and MSV. Second, he conducted simultaneous regressions and proved that investment affects corporate value which again affects ownership structure but not vice versa. This finding shows that ownership structure is *endogenously* determined and not exogenous as assumed by the previously mentioned researchers, which, according to Cho, lead to their flawed OLS regressions.

Yurtoglu et al. (2003) and (2008) emphasize that one should not apply Tobin's q as a proxy for corporate value but instead use *marginal q*, which is the ratio of a firm's return on investment to its cost of capital, in order to circumvent the problem of ownership structure being possibly endogenous.

At first one might suggest that the opportunities for a firm to invest are *exogenously* determined and cannot be influenced by a firm. But after some reconsideration one might argue that managers determine which investment opportunities are embraced and which are not. Therefore solely the manager decides about the amount and nature of investment and it is not investment that determines the identity of owners or managers. As a consequence, that

returns on investment follow from the nature of the carried out investments, these must be considered *endogenous* too.

Using the previous examples it can be shown that there are a lot of areas in which endogeneity is hidden at first sight but after necessary diligence and testing the hidden issues can be revealed and dealt with properly.

VARIABLE 1: Corporate Value

2.2 Definition of Value

Value can either be perceived subjectively or objectively. Subjective value cannot or hardly be measured. It differs from person to person, depending on several individual factors such as personality, culture, family, etc. In order to serve our needs, value has to be consistent and replicable, thus objective. It has to be quantifiable and must not depend on individual preferences.

The true definition of value is hard to determine and it is one of the topics in economic science, which has been discussed steadily and heavily since its early stage. As a result many definitions of value can be found.

Common definitions of value, which can be found in economic literature, are:

- Value of an asset resembles its capability of creating surplus or income. The created income is referred to as the assets value.
- Spremann (2004) states, that value in an economic context can be derived in four different ways, by looking at book values, replacement values, liquidation values or possible future earnings.

2.3 Purpose and Motives

The main purpose of corporate valuation is to create a basis, a quantifiable measure, for economic decisions. Many different methods of computing a corporate value can be examined. It can be said that there is no “true value” of a company. The “true value” depends solely on the purpose of the valuation and might differ from reason to reason.

Companies are valued due to several reasons such as the sale or purchase of a company, a planned initial public offering (IPO), a credit rating, taxation issues, value based management or many more.

The motive, in our case, is to show a possible dependency by means of regressing the assumed independent variable of corporate performance (value) against the dependent variable of governance level.

2.4 Methods

As mentioned before, there are several methods to compute a corporation's value and there is no single superior method, which provides the best result. The chosen method depends solely on the motive of valuation. If we compare all these methods they should enable us to narrow down an efficient *value range* on which we can base our decision.

Seppelfricke (2007) states that the valuation of companies is very sophisticated. It appears to him as science and art at the same time because *methodological knowledge* is needed to choose the *right method* and *instinctive feeling* is needed to *assess* the *proper numbers* for uncertain future earnings or interest rates.

In the subsequent sections it will be dealt with some of the most common approaches along with their advantages and disadvantages.

2.4.1 Net Asset Valuation

2.4.1.1 Asset Value Based on Replication Values

This valuation method is based on replication values and it anticipates ongoing business activity. The replication value represents the sum of replacement costs that would occur, if one tried to replicate the target company's assets. In other words, it is the amount that has to be spent in order to receive equivalent assets at current market prices.

	Replication value of operative assets
+	Liquidation value of non operative assets
-	Value of debt
=	Net asset value based on replication values

Asset valuation based on replication values is an easy to apply method, which is practically used quite often in order to get a quick overview of the company's value as imposed by its assets. However, herein also lies its biggest disadvantage. It only focuses on the company's tangible assets and neglects the intangible assets, which can as well impose some value. Additionally, future expectations are not considered at all.

2.4.1.2 Asset Value Based on Liquidation Values

This method provides an overview of a company's value, if its management decides not to continue business activity but instead wants to liquidate.

Asset valuation based on liquidation values does not consider market prices, but instead focuses on the achievable prices at the event of liquidation. Time and liquidation costs are two main aspects, which contribute, in a negative way, to the liquidation value. If a company has to liquidate urgently because of the pressure that creditors put on it, it might not be able to wait and sell its assets to the highest bidder but instead it must sell quickly at a lower price. As a consequence the liquidation proceeds become smaller.

According to Grinblatt (2004, S. 576) liquidation costs are the difference between the firm's going concern value, the present value of the future cash flows that the firm's assets would generate if it were to continue operating, and its liquidation proceeds, which is what the firm could collect by liquidating its assets and selling them.

+	Liquidation proceeds of all assets
-	Value of debt
-	Liquidation costs
=	Liquidation value

In general a company should liquidate if its liquidation value is higher than its value based on ongoing business activity.

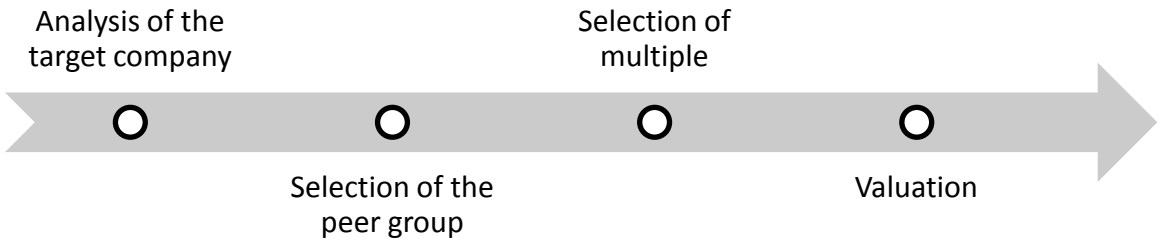
2.4.2 Multiples

This approach is strongly dependent on comparable companies. In other words, the valuation of companies, which is based on multiples, strongly depends on a peer group. The peer group has to be selected very carefully, because it should match the valuation target as closely as possible. The main emphasis has to be put on the matching of size, industry, profits, financial risks and the lifecycle state of the selected companies. Due to the many factors involved, it is nearly impossible to find companies, which exactly match the target company. As a countermeasure the peer group should be large enough in order to compensate for the differences. It will not be possible to compensate for a hundred percent but it should help to approach it.

Multiples are computed by putting selected annual report key figures of a peer group into relation and then averaging them. A multiple represents an easy to apply multiplication factor which is oriented at market prices.

One can distinguish between equity-value multiples and entity-value multiples. Equity-value multiples are used for the calculation of a company's equity value, whereas entity-value multiples are used for the calculation of the company's total value. The MV/EBIT ratio, the price/book ratio or the P/E ratio are possible examples for a multiple.

In order to assess the market value (MV) of a peer group's company two different approaches can be applied. On the one hand the market capitalization (trading multiples) serves as a value indicator. On the other hand the transaction price (transaction multiples) can be used to estimate value.



Multiple valuation process

2.4.2.1 Analysis of the Target Company

First, the target company should be analyzed carefully in order to work out the relevant factors for choosing the appropriate peer group. Second, its operative business should be analyzed with the help of key figures from the annual report. Third, a strategic analysis should be undertaken, which should show the company's potential of future success.

It will be left out to explain the tools of analyzing operative and strategic business activity in detail since it is not essential for this thesis.

2.4.2.2 Selection of the Peer Group

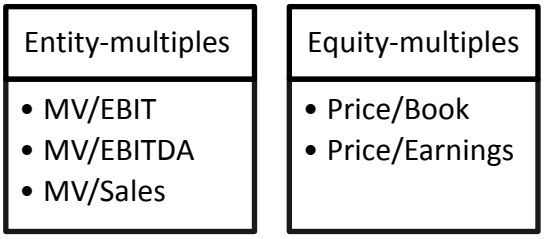
The selection of the peer group is a critical step in the multiple valuation process since the quality of the multiple depends on the chosen group. The peer group should match the target company as closely as possible. In any case the main features, which should be considered, are the matching of size, industry, profits, financial risks and the current lifecycle state. In order to compensate the inequalities among the chosen companies the number of companies in the peer group has to be large.

A large number of comparable companies is hard to find in practice due to a limited number of candidates in the market. The number is limited because of several reasons. One reason lies within the nature of the valuation process, which is market oriented. Therefore only companies can be taken into account, which are listed on a stock exchange respectively which supply public visible reports. Another reason, which impedes the finding of comparable firms, is the existence of different accounting standards throughout the world, such as US GAAP or IFRS.

2.4.2.3 Selection of the Multiple

Basically, we can distinguish between two different types of multiples: *Entity* and *equity multiples*. Entity multiples help to compute the entire firms value, whereas equity multiples only lead to the value of the firm's equity.

The decision of which multiple to use is therefore based on the purpose of valuation.



Multiples

The *MV/EBIT ratio* neglects interest and tax payments and focuses at the company's operating profit.

The *MV/EBTIDA ratio* additionally leaves out depreciation and amortization, which is beneficial, if the company has just been founded and high depreciation accrues in the first years. This ratio would make it comparable to the EBIT of firms, which operate in the market for a longer time.

The *MV/Sales ratio* is probably the easiest way to compare companies within countries of different accounting standards because sales are not affected by the differences in standards.

The *Price/Book ratio* reflects a relation of the market price and book value of equity. With the help of this ratio one can easily detect if a company is undervalued. An undervalued company has a P/B-ratio of below one. This would imply that the market has not yet adapted to the book value of the company and arbitrage profits are possible by purchase and resale of that company. Normally a P/B-ratio below one cannot be observed for a very long time.

The *Price/Earnings ratio* is the most established multiple. It relates actual share price to earnings per share (EPS). This multiple becomes problematic if the company's earnings fluctuate a lot and if the company operates at a deficit. Seppelfricke (2007, S. 153) proposes to extend the P/E ratio by taking the future growth ratio into account. He refers to it as PEG-ratio. This PEG ratio is computed by dividing the P/E ratio over the compounded annual growth rate of profits.

2.4.2.4 Multiple Valuation

EXAMPLE:

This example assumes that all the criteria of the selection process have been met and that the peer group closely reflects the target company. The chosen multiple is the MV/EBIT ratio and the target company's EBIT amounts to 950.000.-

Peer Group	Market Value (MV)	EBIT	MV/EBIT Ratio
Company #1	11.000.000,00	980.000,00	11,2
Company #2	10.500.000,00	1.100.000,00	9,5
Company #3	9.875.000,00	900.000,00	11,0
Company #4	9.500.000,00	875.000,00	10,9
Company #5	9.000.000,00	1.000.000,00	9,0
Multiple (mean):			10,3

$$MV_{TC} = EBIT_{TC} * multiple \quad (3.1)$$

Applying equation (3.1) the estimated market value of the target company is equal to 9.785 million. ($9.785.000 = 950.000 * 10{,}3$)

We can conclude that the multiple approach has its advantage based in being market oriented and that it helps to compute a potential market value for the target firm in respect to the firms, which operate in the same market.

Since this method is based on market values respectively market capitalization, we know that market prices are very volatile and tend to fluctuate a lot. For that reason the company's computed value fluctuates a lot over time.

2.4.3 Discounted Cash Flow Method

The discounted cash flow (DCF) method is probably the most common approach found in practice when it comes to the valuation of a company. It derives the value of a company by summarizing the discounted future free cash flows (FCFs). These future cash flows are either based on historical data or based on financial projections with an assumed constant growth rate. The discount factor, which is applied, is the weighted average cost of capital (WACC).

In contrast to the methods, which were mentioned in the previous sections, the DCF-method is not solely based on deterministic values but also considers uncertain forecasts as a basis for valuation. It is the first method, which takes the company's expectation about future development respectively earnings into account.

DCF-methods can be split into the *entity* and the *equity* approach. The entity approach considers the cash flows to shareholders and creditors, whereas the equity approach only considers the cash flows to equity holders (shareholders). The discount rate in the entity approach only includes the cost of equity. The discount factor in the entity approach considers the cost of equity in addition to the cost of debt in relation to the company's capital structure (WACC).

2.4.3.1 Free Cash Flow

The free cash flow (FCF) is defined as the residual of a company's earnings after meeting investment expenses and corporate income taxes. It can be used either to pay off debt and interest or it can be paid out to shareholders in the common form of dividends.

	EBIT
+	Accruals
=	Gross cash flow before taxes
-	Corporate income taxes
-	Investments
=	Free cash flow (FCF)

With the help of historic free cash flows of a company the evaluator will try to forecast a development of cash flows under the assumption that the company's will operate until infinity. The assumption of infinity has been made according to the going concern principle. It emphasizes that an entrepreneur's main objective is to keep a company up and running as long as possible. The infinite time span requires in order to be realistic, that the forecast is split into two parts: The first part contains projections of cash flows for a maximum of five to eight years (foreseeable part) and the second part contains the terminal value, which assumes a constant growth of the cash flows until infinity. Based on these cash flows the DCF-valuation will be conducted and the value will be derived.

2.4.3.2 Weighted Average Cost of Capital (WACC)

The main purpose of WACC is to provide a discount factor, based on capital structure, the costs of capital and taxation benefits. It is used to discount the company's free cash flows in order to provide the present value of the future inflows. The cost of capital consists of two parts, namely the cost of equity and the cost of debt.

The cost of equity (r_e) reflects the opportunity cost of equity, which is normally assumed to be the interest rate for a riskless (default free) investment (r_f), taken from the capital market. Markowitz extends this assumption by the introduction of the capital asset pricing model (CAPM), which derives the cost of equity from the riskless interest rate plus a premium for the company's specific risk. He assumed, that an investor, who undertakes a risky investment wants to receive a premium relative to the risk he faces in addition to the riskless interest rate. The fraction of risk the investor faces is denoted by β, whereas the risk premium is depicted by the difference of the market return and the riskless interest rate.

$$r_e = r_f + \beta(r_m - r_f) \tag{0.2}$$

The cost of debt (r_d) can be computed by summarizing and then averaging the interest rates (ir_n) of all interest-bearing debt of the company. The effective cost of debt is derived by multiplying r_d with the tax shield, which considers the fact that interest expenses are tax deductible and hence reduce the cost of debt.

$$r_d = \frac{\sum_{n=1}^{n} ir_n}{n} \tag{0.3}$$

$$r_d^{eff} = r_d * (1 - tax) \tag{0.4}$$

$$WACC = r_e * \frac{E}{V} + r_d^{eff} * \frac{D}{V} \tag{0.5}$$

2.4.3.3 DCF-Valuation with WACC

$$\mathrm{V} = \sum_{\mathrm{t}=1}^{\mathrm{t}} \frac{FCF_{\mathrm{t}-1}}{(1 + \mathrm{WACC})^{\mathrm{t}-1}} + \frac{\mathrm{FCF_t}}{(i - g) * (1 + WACC)} \tag{0.6}$$

2.4.4 Book Value

A company's book value can also be used as a basic determinant of its valuation range. Its book value (equity) is simply the difference between its assets and liabilities as listed in the balance sheet. Since a company's valuation is mostly above book value, this value can serve as a bottom line of valuation.

2.5 Tobin's Q

Tobin's q is a measure for a company's *performance* and is named after its originator James Tobin. He introduced the factor *q*, which represents a ratio of a company's market value and its replacement costs.

$$Tobin's\ q = \frac{market\ value\ of\ a\ company}{replacement\ costs\ of\ its\ assets} \tag{0.7}$$

Tobin's intention was to show a connection between his *q* and investments. He argued, if a company's *q* exceeds 1, than the specific firm has an incentive to invest because the value of

the invested capital would exceed its costs. Hence in the case of an optimal investment strategy the firm's *q* would tend towards 1. Furthermore Tobin distinguished between *competitive firms* with *free entry* to the market and *monopolies* with *entry barriers*. For a competitive firm one would expect a *q* towards 1 due to the rivalry of firms, whereas one would expect a *q* greater than 1 for monopolies in respect to their market power.

In reality a competitive firm's actual *q*, in almost all of the cases, differs from unity, which might be due to the following reasons.

First, a firm might profit from factors which enhance production and are not included in its replacement costs, such as knowhow, synergy effects or other factors which lower a firm's cost function. Hence intangible assets are not considered in Tobin's q.

Second, it is quite difficult asses the accurate measures of a firm's market value and the replacement costs of its assets.

In order to asses an accurate measure of *market value* one can sum the values of securities, which a firm has issued. This is a suitable approach since security markets are close to perfectly competitive markets and therefore should represent a "true" market value. A firm's issued securities can be common stock, preferred stock, bonds and debt.

It is more difficult to obtain an accurate measure of a firms *replacement costs* due to the reason that normally no active markets for used equipment exist. Therefore it is difficult to estimate an appropriate and replicable replacement value and it might be biased due to individual preferences.

2.6 Problems of Using Q and Average Measures of Performance

As described before Tobin's q is a commonly used measure of performance or a measure of controlling for a company's investment opportunities. Nevertheless there is some confusion about the use, applicability and true nature of Tobin's q. A lot of researchers use the ordinary q-ratio, which represents an average measure, in their studies but they do not distinguish between the *average q* and the *marginal q*. For reasons of simplicity they assume that the average q proxies for the marginal q. This is not very accurate, Hayashi (1982) defines the *average q* as the market value of *existing* capital in relation to its replacement costs and he defines the *marginal q* as the market value of an *additional* unit of capital in relation to its

replacement costs. According to Gugler, Mueller and Yurtoglu (2004) it can be appropriate to use average q as a proxy for marginal q in settings, where one assumes perfect competition, constant-returns-to-scale and that firms are price takers, but this is definitely not true in all the cases. In the other cases where firms are not price takers and the markets are not perfectly competitive marginal and average returns on capital do not concur and equilibrium might exist where a company's average return on capital varies from its marginal return. Several times throughout their work Gugler et al. point out the importance of using marginal q as the relevant factor for investment.

A possible explanation, why researchers tend to apply the average q instead of the marginal q in situations where marginal q would be appropriate could be that in principle average q is a directly observable factor, whereas marginal is not directly observable.

Gugler and Yurtoglu (2003) give some examples why average measures in general inherit disadvantages in connection with economic research:

1. Average measures of performance *mingle inframarginal and marginal returns*
2. Average measures *necessitate a fully structural* model of the determinants of performance
3. Average measures as well entail problems of *omitted variables, reverse causation and endogeneity*.

They argue that the use of the marginal q would serve as a solution to the unavailable structural model as well as a solution to reverse causality and endogeneity.

3. VARIABLE 2: Corporate Governance

3.1 An Overview

Corporate governance gained importance during and after the fall of giants such as ENRON or WorldCom. These companies, who where assumed to be profound and stable companies, failed because of adverse managerial behavior. Based on facts, it is to say, that as long as a company performs well, no one can be bothered to interfere or question the management's decisions. But as soon as a company gets into financial distress, investors and other groups tend to "wake up". Normally, at that point in time, it is already too late. Huge amounts of wealth, working places, etc. have been destroyed. Shortly after the awakening people tend to start the questioning: Why do we invest? How is it possible that a company's management gains such extensive control rights and that no one cares at first? Are there any monitoring mechanisms or incentives that can keep management from acting in the wrong way? What is the right way? In whose interest should the managers act? What role does the state play in this environment? All these questions are subject to corporate governance, which embodies a relatively young and unexplored research field. Nevertheless, some, steadily increasing, theoretical and empirical literature has been published from economists all over the world in the last years.

In most cases, in present economic literature, corporate governance is referred to as the sum of protection mechanisms, which should retain the shareholder's interests. However this statement is not very popular from a social point of view. A social point of view is referred to as the stakeholder perspective, which does not only consider the shareholders worthy of protection, but also considers the interests of all other stakeholders worthy of it.

The necessity for corporate governance can be traced back to the *separation of ownership from control*, which took place as the corporate from began to evolve in the early 17th century. Due to the increased demand of capital, triggered by radical innovations, it became necessary to include investors in current projects in order to raise the huge amounts of capital, which were needed. The investors, in return, wanted to be rewarded for their participation in the form of a share of profit and a share of the firm. At that time the first public companies were born. With the advance of *dispersed ownership* of public companies, it became impossible, due to several reasons, which will be mentioned later in detail, to include all of

the shareholders in the decision process of a firm. As a consequence management had to be granted more freedom in their control power. One reason for this development was the fact, that not all outside investors could be equally well informed about the company businesses. Therefore, lacking essential information, they could not decide efficiently on a company's actions and thus needed to delegate this duty to another instance, the management. The lack of information respectively the *asymmetric distribution of information* led to the core problem of the management's possible adverse behavior - the *principal agent dilemma*. With the growing awareness of the dilemma people started to think of and apply counter measures. The state provided new laws and adapted old ones to ensure a better protection of the shareholders. Some companies on the other hand developed and subjected themselves voluntarily to so called "*Corporate Governance Codes and Standards*" in addition to the legal framework. The purpose of these additional Codes was to confront the shareholders with another incentive to invest because the fear of losing investors was imminent. Corporate Governance Codes comprise the company's institutions of monitoring the management from the inside. In addition to these *internal monitoring* mechanisms and the *legal framework*, *external monitoring* mechanisms, such as large block ownerships and hostile takeovers, proved themselves to be effective mechanisms against adverse managerial behavior.

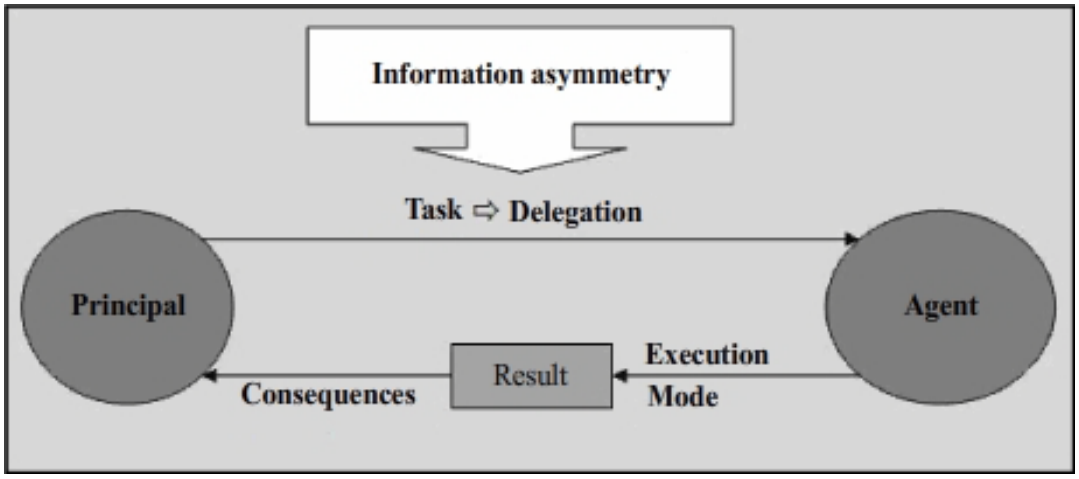
3.2 Theories and Perspectives

3.2.1 Agency Theory

The agency theory or principal-agent problem was documented and reviewed by Jensen and Meckling (1976), later Fama and Jensen (1983) in connection with the contractual view of a firm. They describe the firm as a nexus of multiple contracts. Their simplified model deals with a contractual relationship of a principal (the shareholder) and an agent (the management). It is assumed that the participants act in their own interest, which is made possible due to an underlying *information asymmetry*, which naturally exists between them. That, as a consequence, leads to multiple conflicts in the proper design of the contract of employment. The contract should enable the principal to contractually offset all possible risks in the agent's behavior. In reality, though, it is not possible to create such a *complete contract*, which foresees all possible risks and eliminates them in advance. The more conditions are

included in a contract, the higher the costs will be to create it and the more costly it will be to enforce it. For that reason Jensen et al. speak of *incomplete contracts*.

Contracts become necessary in the presence of *uncertainty*. Spot market transactions do not require any contracts because there is no timely delay between the actual payment and the transaction of goods and hence no uncertainty about the outcome of the transaction exists. If the transaction of goods involves a timely delay, both parties will not be able to foresee future occurrences and therefore they have to safeguard themselves against all kinds of uncertainties respectively opportunistic behavior by the use of a contract.



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The quality of made and future decisions of the principal and the agent are strongly affected by an asymmetric information distribution, which, in some cases, encourages opportunistic behavior. *Opportunistic behavior* is a key element to the principal agent problem in addition to the *asymmetric information distribution*. Another observation, which has been made in principal agent theory, is that different *risk preferences* exist among the involved parties. They can either be risk neutral, risk averse or risk loving.

The key factors in the principal-agent theory are as following:

- Asymmetric information distribution
- Opportunistic behavior
- Different risk preferences

These key factors leave a vast space for problems, which can occur between the principal and the agent. In order to solve or prevent these problems different measures have to be undertaken and costs occur, which are referred to as *agency costs*. Jensen and Meckling (1976) explain the agency cost to be the sum of the following three factors:

1. Monitoring expenditures by the principal
2. Signaling costs of the agent
3. Residual welfare loss

The problems that arise can be roughly divided into three main categories, which are induced either by moral hazard, adverse selection or hold up scenarios.

We speak of a moral hazard in connection with a change in behavior due to a shift of risk, which a party faces after (ex post) signing the contract. A person might behave differently if the risk he faces declines in contrast to the risk he faced before. A reduction in risk can be achieved for example by an insurance contract.

As an example, consider the implementation of an insurance contract against thievery when buying a bike. As soon as the bike has been insured the old risk (the total loss of the bike) will shift from the owner to the insurance company and only a fraction of risk (the cost of the insurance contract) will remain at the owner. Therefore the owner will care less about the bike and probably leave it outside overnight, where it will be stolen more likely as if he had brought it into his house.

Another example could be the implementation of debt financing to a project. Consider an investment project and the fact that it is solely financed via equity. In that case the equity provider will bear the full risk of the success of the project and as a consequence he will be very careful with the realization of the project. But as soon as he finances the project partly with debt, the risk will shift to the creditor as well and the debtor will now bear a smaller fraction of risk, than the one he faced before. As a result he might behave different *after* getting the credit in connection with the realization of the project.

We speak of adverse selection in connection with hidden information that one party keeps from the other *before* (ex ante) making a contract. By hiding essential information ex ante the outcome of a contract is mostly disadvantageous to the party, who does not have that information.

Akerlof (1970) explained the happening and the consequences of adverse selection in connection with the automobile market. One the one hand he stressed that potential buyers of cars cannot evaluate the cars quality and that these buyers are only willing to pay a price that resembles the average value of cars in the market. Therefore the price must be somewhere between the value of a bad car (lemon) and the value of a good car (peach). On the other hand, sellers of used cars are more likely to assess the quality of the car, which they are willing to sell. If the seller's car is a lemon and the market price is located somewhere within the before mentioned margins, he will happily sell the car. If the car is a peach, the seller knows that the car is undervalued in respect to the market price that potential buyers are willing to pay. As a consequence the market for good cars will disappear and only bad cars will be left on the market.

3.2.2 Shareholder Value Perspective

The shareholder value perspective was characterized by Alfred Rappaport (1986) and is commonly to be found in Anglo-Saxon countries. Rappaport propounded, that the only goal of a firms management, concerning their decisions, should be the maximization of a firms market value in order to compensate the providers of equity. Furthermore he stressed that only the shareholders are entitled to the residual cash of a firm after meeting all due payments. He refers to the residual cash as the Free Cash Flow, which serves as a basis for computing the shareholder value.

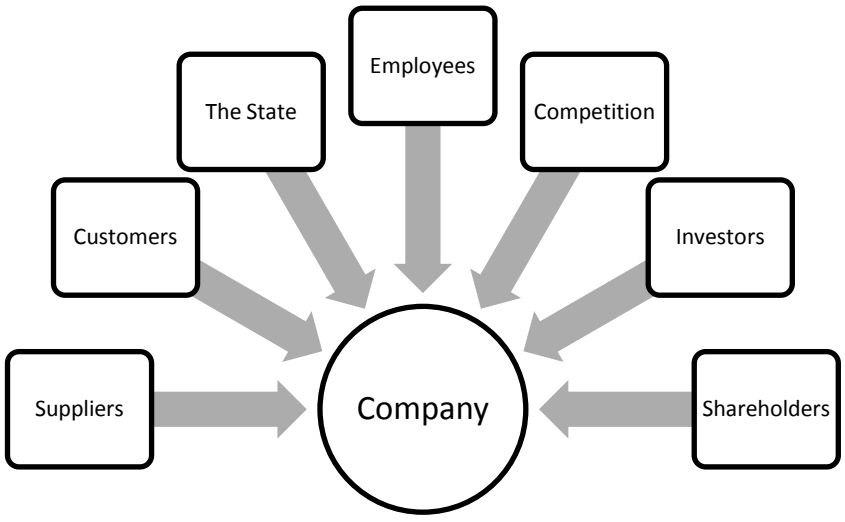
This perspective neglects implicit obligations, which a firm faces towards its stakeholders. It claims that all implicit obligations are paid off, for example, by wages, which are paid to the employees, or by prices, which are paid to the suppliers. The circumstances, that employees specialize and therefore become dependent on the company they work for or that suppliers build their factories close to their customers, are not considered or valued.

Summarizing it can be said, that the shareholder value perspective only emphasizes the profitability, denies social responsibility and sees organizations primarily as instruments of its owners.

3.2.3 Stakeholder Value Perspective

The stakeholder value perspective, in contrast to the before mentioned shareholder value perspective, takes a more social point of view and can be encountered in Continental European countries. It considers the critiques, that the shareholder perspective is too single-sided and therefore takes all economic groups of interest into consideration. The groups of interest include employees, suppliers, customers, the state, competition and many more. The management should consider all groups of people, who have something "at stake" due to their ongoing business relationship, when it comes to making its decision. A company is not seen as an instrument of shareholders, but it is seen as a coalition between various individuals, with the intention of increasing their common wealth.

Tirole (2001) states that a movement from traditional shareholder value to the broader concept of "stakeholder society" can be observed in which the interests of non-investing parties are better respected. The traditional shareholder value approach is a too narrow view for an economic analysis of corporate governance and therefore he characterizes corporate governance as the design of institutions that induce or force management to internalize the welfare of stakeholders, which is quite uncommon for an economist.



Possible Stakeholder relations

3.3 Separation of Ownership and Control

The separation of ownership and control has its roots buried in the circumstance that a profound change in the economy had occurred. Financial markets had gained more and more of importance and with it many new companies were listed on the stock exchange to prosper from external funding. As a result shareholders had become more numerous and dispersed throughout the whole world. With the establishment of Markowitz's "Modern portfolio theory" it became very common to hold a diversified portfolio, which should contain many shares of different firms in order to minimize the unsystematic risk and achieve optimal returns on investment. Due to the manifold investment opportunities on the capital market investors do not care so much anymore how the firms respectively the management performs. If, in their opinion, it performs poorly they just sell the owned shares and *exit* rather than make use of their control right by *voice*. All these developments made the gap between shareholders and the controlling management become bigger and bigger and bestowed more and more freedom on managerial decisions because firms were not held by a few individuals anymore but by a large number of independent, uncoordinated individuals. Berle and Means (1932) were the first to draw attention on this evolution of the firm and on the shift of control from ownership to management.

The questions, which pose themselves now, are, how did a profound change in economy happen? What is the cause for a shift of control towards management?

The change in economy can be explained by following Schumpeter's notion that industries were born out of radical innovations. They were innovations like the steam engine, which gave a large boost to shipping and railway industries in the early 17th century. These industries required huge amounts of steel to build railroads or ships, which in exchange required huge amounts of capital. Since single individuals were not able to supply such huge amounts of money by themselves they formed the first public companies, which in return were able to raise the required amounts of money. As time passed by and as public companies became part of the establishment, shares of companies were traded towards the end of the 19th century and the necessity of stock markets emerged in Europe and the US. These stock markets now allowed for an efficient allocation of excess money, which waits somewhere in the world, to be invested.

In the 17th century only few individuals were involved in public companies and their shares were not distributed a lot and therefore it was them, who had control of the company. They

were the ones who had knowledge of the company's specific needs and necessary actions. But as soon as the ownership of a company becomes more and more dispersed and as soon as people hold different amounts of shares, two things happen. First, people, who hold quantitatively more shares of a company, are more motivated to exert influence on control or control the firm by themselves. The others, who hold less or just little amounts of shares, tend not to actively participate in the monitoring or decision process and confide in the actions of the majority shareholders, which is also known under the notion of the free rider problem. Second, because of the magnitude of different shareholders of a specific company it is not possible for the all the shareholders to be equally well informed about a company's daily work and needs. Therefore the management of a company had to be granted more freedom and power in their decision making due to the fact that it was them who were well informed about the company's businesses and necessary actions.

3.4 Corporate Governance Mechanisms

The mechanisms by which managers are encouraged to act in the interest of shareholders are referred to as a firm's corporate governance mechanisms. They enable the shareholders to monitor the management more closely and to partly overcome the information gap. We can mainly identify three main categories of mechanisms that help to monitor a company and put restrictions to managerial freedom. First, the state provides the corporate law, which setups up a legal framework to protect the shareholders interest. Second, we can identify internal monitoring mechanisms, such as the board of directors, committees or executive compensation. Third, external monitoring mechanisms can be observed, such as the capital market along with hostile takeovers, leveraged buy outs or proxy fights.

3.4.1 Corporate Law - Legal Framework

The first governance mechanism that will be dealt with is provided by the state through the legal system. It is essential for investors to be protected by the state because it guarantees them some rights and their enforceability. Jensen and Meckling (1976) already realized how important the role of legal systems in connection with economic activity is. They state that the state's main role is to enforce and adjudicate existing contracts in order to establish precedents which form the body of common law.

By origin one can distinguish between the Anglo-Saxon common law systems and the Continental European civil law system.

The Civil law system is based on Roman law, in particular the Corpus Juris Civilis. The majority of countries all over the world uses a civil law system but it is especially common in Continental European countries and their former colonies. This system provides codified laws, which are written into collective books in order to make them accessible to the citizens.

The Common Law system on the other hand is a lot younger than the Civil Law system. It developed in England around the 12th century. Decisions were mostly based on precedent, custom and tradition. Only parts of it were codified in the 20th and 21st century. A Common Law system can be found in most Anglo-Saxon countries, such as the US, England, Canada, Australia, India and many more.

The difference of both law systems is mainly, that common law systems rather developed by custom and by the decisions of courts in contrast to civil law systems, which are based on ancient Roman written, constitutional laws.

La Porta, Lopez de Silanes, Shleifer and Vishny (1998) (LLSV) state in their article "Law and Finance", that common law countries provide a better legal system in regard to the protection of outside shareholders than civil law countries. In order to get to this result the authors created an index where one point was awarded if a specified criterion was met and zero points were awarded if the legal system failed to comply. The sum of points than served as a measurement of the country's strength in its shareholder protection (antidirector rights).

They nominated seven criteria, which should enable the measurement of how strong a country's legal system protects its shareholders:

1. One share – one vote
2. Proxy by mail
3. Shares not blocked before general meeting
4. Cumulative voting
5. Oppressed minority
6. Preemptive right to new issues
7. Shares needed to call an extraordinary meeting hast to be less or equal to 10 percent

One share one vote should guarantee that all shareholders of the company have the same voting power according to the amount of shares they hold. Multi voting, which would grant more power to some than others, is not allowed.

Proxy by mail enables shareholders to vote at a general meeting without the need of being physically present.

Shares not blocked before general meeting should enable the shareholder to have full control over his shares even during the annual meeting because some firms require that the shares are blocked or deposited during a general meeting and therefore cannot be traded.

Cumulative voting should help to strengthen the minority shareholder to assign all his votes to a single director of his choice when there are multiple openings to the board. In contrast to regular voting where it is usual to cast one vote per share.

Oppressed minority imlpicates that company law should enable the minority shareholders to take several steps in case adverse changes within the company happen. For example, they should be able to sell their shares to the company if fundamental changes occur.

Common law countries achieved an average of four points whereas the civil law countries achieved only two to three points.

Despite the fact that the article is far reaching and fast spreading, it also earned some criticism. This criticism mostly came from authors in civil law countries. They criticized the simplicity of the awarding system (only 0 and 1), the existence of too little criteria, the reasoning mostly in favor of common law countries and that the differences in board structure had been neglected.

Braendle (2005), for example, shows, that after adjusting several criteria of the LLSV article, the difference between shareholder protection in Common and Civil Law countries becomes far less significant than La Porta et al. propose. The only thing that matters is, that a legal system is in place in order to protect the shareholders and to provide a stable framework which is flexible in order not to scare investors of by too many regulations.

3.4.2 Internal Governance

3.4.2.1 The Board of Directors

The specific setup of the board of directors should enable a firm to overcome some of the agency problems, at least in theory, but in fact, the board itself is the source of many problems. Since the board consists of single individuals, it can be assumed that all of them act, in some way, in their own interest. For that reason it cannot be supposed, that their decisions are always in the best interest of the shareholders.

Two different types of boards can be examined throughout the world. On the one side we speak of a one tier board, which is usually to be found in Anglo-Saxon (common law) countries and on the other side we speak of a two tier board, which is commonly used in continental European (civil law) countries.

Two tier boards are mandatory in public companies and some limited companies in Austria, Germany, the Netherlands, Denmark, Finland and Sweden. In other European countries like Switzerland, France, Spain and Portugal one can choose between a one or two tier board. A two tier board system consists of the management board and the supervisory board. The members of the management board are executive directors, who are involved in day to day business with the power to decide on the firms actions. The supervisory board members are not involved in day to day business. It is their duty to *appoint, remove* and *supervise* the members of the management board. The setup of the supervisory board reflects the perception of the European stakeholder theory, namely that employees should exert an influence on the supervisory board as well. For every two members of capital side, labour side can delegate one member to the board. Members of one board cannot be members of the other board within the same company.

It is quite obvious that this set up contains potential space for problems in context with a present information asymmetry. The supervisory board is dependent on information, which the management board has to supply, since it is not involved into the firms day to day business. If the management decides to withhold information, it can severely affect the supervisory board’s decision in a negative way.

The one tier board structure, which exists in common law countries, combines control and supervision in one board. The board contains executive and non-executive directors, whereas the latter have equal power of making decisions, despite the fact, that they are not included in everyday's businesses. This enables them to react to the executive manager's decisions at the same time and not afterwards, as common in the two tier board system. The circumstance that non-executive directors are not independent from the firm might serve as an advantage here in relation to monitoring because they might obtain important information from their executive colleagues much easier. It is not usual to have labour representatives on the board, which resembles the shareholder perspective of common law countries. Nevertheless common law countries recognized the importance of an independent instance of monitoring and they formed independent board *committees*, which obtain an independent advising function. Committee members are drawn from members of the Company's board of directors. It is part of the listing requirement at almost all stock exchanges to have independent committees installed in the corporation's structure.

It is hard to say, which board system is the dominating or better one. Braendle and Noll (2005) state, that every system has its advantages and disadvantages. They, among others, show, that a convergence of both systems can be observed. If one takes the convergence process for an evolutionary process one might suppose that the new outcome would be an enhanced and superior system.

A further sign of convergence of both board systems is the introduction of committees in the one tier board systems. These committees should oppose the board of directors in the form of an additional independent instance, which possesses the right to monitor them and in some cases negate their decisions. Committees can therefore be closely compared to the two tier supervisory board.

The constitution of permanent committees such as, the audit committee has become a standard requirement, if a company wants to be listed on almost every stock exchange. Common types of committees, which can be found closely attached to the board of directors, are: *audit, compensation* and *risk committees.*

The *audit committee*'s main function is to assist the board of directors to fulfill their oversight function by:

- monitoring and assessing the integrity of financial statements
- monitoring processes to ensure compliance with legal and regulatory requirements
- monitoring the qualifications, independence and performance of the external auditors

The *compensation committee*'s main function is to:

- specify, control and recommend compensation plans
- specify, control and recommend actual compensation

The *risk committee*'s main function is to:

- identifies all areas of potential risk;
- provide adequate policies and procedures concerning the identified risks
- implement ways of managing them

3.4.2.2 Executive Compensation

Another attempt in overcoming the principal agent dilemma, which exists between the management and the shareholders of a widely dispersed company, is to incentivize the management by the installment of remuneration plans. Yurtoglu and Haid (2006) analyzed data of several large firms in Germany and came to the result that the evidence of managerial compensation being a large fraction of these companies earnings, proofs the existence of a principal agent problem caused by the separation of ownership and control. Furthermore they showed that concentrated ownership has a positive impact on the supervision of an appropriate pay level in relation to performance.

Compensation plans should reward the management for actions, which increase the company's performance and as a consequence the shareholders wealth.

Bebchuk et al. (2002) describe two approaches to executive compensation: On the one hand they depict the *optimal theoretical contracting approach* of executive compensation and on the other hand they show the *managerial power approach*, which can be encountered in reality.

The objective of the optimal contracting approach is to minimize existing agency costs. These agency costs emerge from the agency dilemma through monitoring costs, contracting costs and other costs, which need to be spent in order to achieve a certain stage of compliance with the principals (shareholders) interest. Thus an optimal compensation plan has to have three main effects:

1. Attract and retain high quality executives
2. Provide executives with incentives to enhance their effort and decision quality
3. Minimize overall costs

For that reason Bebchuk et al. (2002) name three mechanisms, which could produce optimal executive compensation programs. Unfortunately they also highlight that these mechanisms are in most cases not efficient enough to function properly. First, the board *acting at arm's length*, selects the compensation program that maximizes shareholder value. Second, executives are constrained by *market forces* to select the compensation program that best serves the shareholders interests. Third, shareholders themselves can use their *right to block* remuneration programs, which are not optimal for them.

The managerial power approach to compensation conveys, that managers themselves posses the power to influence their remuneration programs despite the utilized security measures of independent control instances. Bebchuk and Fried (2004) demonstrate the existence of a vast deviation in the linkage of executive compensation and firm performance. They urge that compensation should not only meet the executive's reservation price but it should be tied to performance. The reasons for such deviations could be buried in the circumstances that some independent directors are captured, sympathetic to management, subject to influence by management or simply inefficient in their position as a safeguard.

McConvill (2004) criticizes Bebchuk and the majority of agency theorists by stating that their view of human motivation and behavior is too narrow and ultimately false. He argues that it is not only monetary wealth that managers are interested in. There are a lot of other factors, which can positively or negatively affect the manager's decisions. Agency theorists should also consider the other factors instead of concentrating on only one misleading factor – the executive compensation.

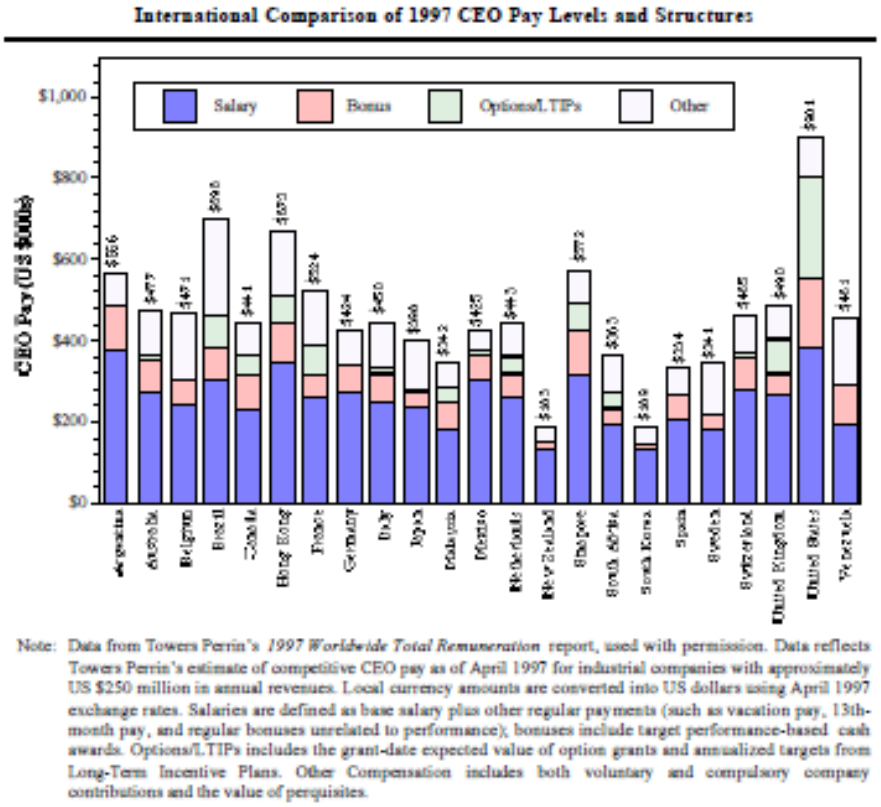
3.4.2.2.1 The Setup of Executive Remuneration Contracts

Today most of the managerial remuneration contracts consist of two parts. These two parts include a fixed and a variable payment type. The fixed part is the known as the base salary, whereas the variable part is the part which should incentivize the manager by being tied to the company's performance. The variable payment type can take the form of *stock options*, *accounting performance based bonuses*, *long term incentive plans* or *stock option plans*. The variable part of the payment can either be bound to *short* or *long* term performance increases.

Most common types of payments:

1. Salary – only fixed payment
2. Accounting based pay – f.e. bonus
3. Market based pay – f.e. stock options

Image 3-1 shows the international comparison of 1997 CEO pay levels and their structure. Looking at the United States and the UK it can be recognized that the base salary is relatively small compared to the variable payments such as the bonus, options and others.



Note: Data from Towers Perrin's *1997 Worldwide Total Remuneration* report, used with permission. Data reflects Towers Perrin's estimate of competitive CEO pay as of April 1997 for industrial companies with approximately US $250 million in annual revenues. Local currency amounts are converted into US dollars using April 1997 exchange rates. Salaries are defined as base salary plus other regular payments (such as vacation pay, 13th-month pay, and regular bonuses unrelated to performance); bonuses include target performance-based cash awards. Options/LTIPs includes the grant-date expected value of option grants and annualized targets from Long-Term Incentive Plans. Other Compensation includes both voluntary and compulsory company contributions and the value of perquisites.

Image 3-1: Source: (Murphy, 1998)

Annual bonus plans are the most common *short term incentives*, which are used in practice. These short term incentive plans are called *80/120 plans*. No bonus is paid out until 80 percent of the performance standard has been met and the bonus is capped at 120 percent of the performance standard. Image 3-2 shows a standard 80/120 payout scheme.

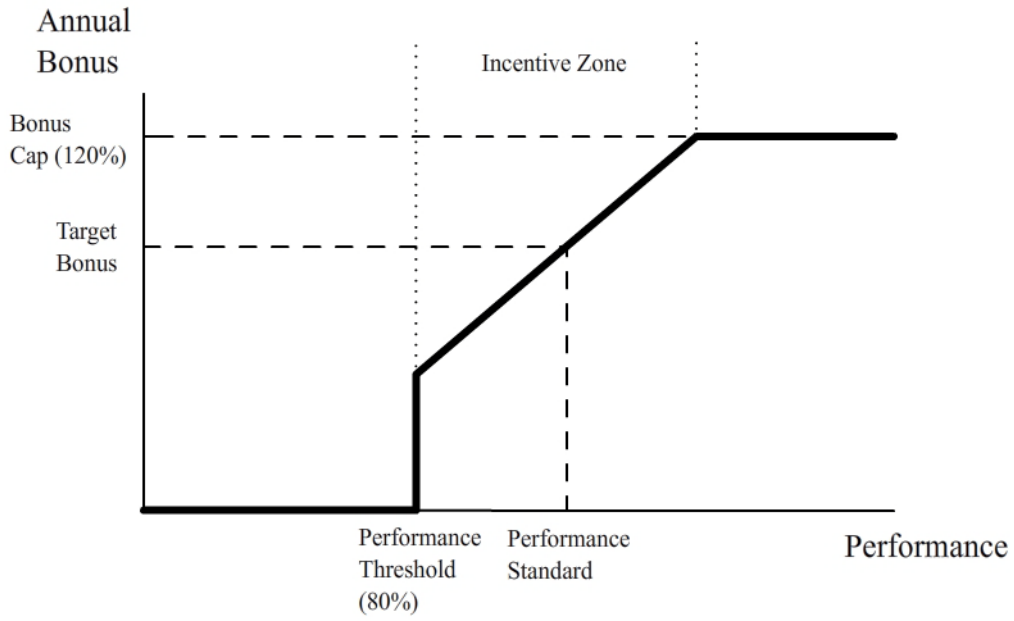


Image 3-2: Standardized annual 80/120 bonus scheme

Long term incentive plans (LTIP's) are the attempt to incentivize the management to achieve a long term performance enhancement of the company. A long term incentive plan usually exceeds a period of five years and is based on stock options, restricted stock, etc.

3.4.2.3 Corporate Governance Codes and Standards

After the corporate collapses of the 1980s it became necessary to regain the trust of potential investors. For that reason Corporate Governance Codes and Standards were developed voluntarily by companies in order to present another security, besides the existing legal framework, to the investors. Companies in the Anglo-Saxon countries, like Great Britain and the US, took the role of forerunners by producing the first corporate governance reports.

Great Britain produced the Cadbury report in December 1992, which mainly focused on the wider use of independent non-executive directors and the introduction of audit, remuneration and nomination committees. Several other Corporate Governance Codes were produced in the years after that, which continuously tried to contribute to the protection of the shareholder. The latest Corporate Governance Code was introduced in June 2006 under the name of the "Revised UK Combined Code". It dealt with four main topics: independence, diligence, professional development and performance evaluation of boards.

In the United States the main driver of change was not a voluntary code but legislation. After the collapse of huge companies like Enron or WorldCom in the early 2000s the Sarbanes-Oxley Act was passed in 2002. It was the most profound change in the federal securities law since the crisis in 1930 and soon became obligatory for all public US and non-US companies who wanted to be listed at a US stock exchange. Severe criminal and civil penalties had to be expected for those companies who did not comply.

Many other countries respectively companies soon followed the model of these two countries and created their own Corporate Governance Codes. Today most economically significant countries have published Corporate Governance guidelines or principles.

3.4.3 External Governance

3.4.3.1 Takeovers

There are many different reasons why companies are taken over. Some reasons for takeovers are: *the achievement of synergy effects, taxation issues, undervaluation of the target, wealth transfers* or *the replacement* of inefficient managers of poor performing firms.

Hostile takeovers are the most radical way in *disciplining* a company's management. They are rather uncommon in Continental Europe, which is due to the fact that ownership in Continental Europe is mainly concentrated, whereas they were very common in Anglo-Saxon countries like the US and the U.K. in the mid 1980s. The dispersed ownership structure of the latter facilitates the attempt of a hostile takeover. In a hostile takeover process the raider places a *tender offer* to buy a majority of shares at a stated price and it is considered to be successful at the moment he gains 50 or more percent of the voting shares. Thus at the

moment he is in effective control of the company. This can be efficient in two ways: The new majority shareholder could either reduce the information asymmetry of the incumbent manager or replace the inefficient manager. The possibility of replacing the management is the main instrument of disciplining the management. Empirical studies show that if a firm performs poorly the probability of being a takeover target increases significantly. (Morck, Shleifer, & Vishny, 1988)

In current literature there are many discussions about the *ex-post* and the *ex-ante* efficiency of hostile takeovers. Takeovers in general are very costly, can increase the agency costs if the management of the acquiring firm decides to engage in a hostile takeover just for their private benefit and require a very liquid capital market in order to supply enough capital in a very short time.

Agrawal and Jaffe (2003) investigated operating and stock returns performance *before acquisition* for targets of over 2000 takeovers from 1926-1996. The data they used had been taken from several other empirical studies. As a result they showed that the correction of poor performing firms is not the *main* reason for takeovers, but they also did not contradict the fact that it could have been the reason in some cases. Their survey only considered successful takeovers, which means, that it is still possible, that the threat of being taken over alone serves as a disciplinary measure.

Researchers, who analyzed the long run stock returns *after the acquisition* came to different results. Agrawal et al. (1992) showed abnormal negative stock returns after the acquisition, whereas Franks, Harris and Titman (1991) could not identify any abnormal returns.

Managers of companies with weak corporate governance structures try to overcome the threat of being annihilated through the installment of anti-takeover defenses. Becht et al. (2002, S. 25) describe the split opinions about the positive effect of anti-takeover defenses for the shareholders. Some researchers argue that anti-takeover defenses are definitely against the shareholder's interest whereas others argue that these defenses are an important tool to extract more wealth from the acquirer by making it more costly to overcome the defenses. Jensen and Ruback (1983) showed that gains from hostile takeovers without exception go to the target shareholders. Anti-takeover defenses can manifest themselves in the form of classified boards, supermajority requirements, cross-shareholdings, poison pills, golden parachutes, etc. Gompers et al. (2001) prove that anti-takeover provisions have a significant negative impact on firm value.

3.4.3.2 Large Outside Block Holders

Investors, who own a large proportion of shares of a company, are referred to as block holders. Large block holders are usually *institutional investors* in the Anglo-Saxon market-based systems and *families, corporate investors (banks, etc.)* or *the state* in the Continental European control-based systems.

Large block ownership is said to be another mechanism of external corporate governance. Although it is questionable if large block owners contribute to overcoming the principal-agent dilemma. On the one hand large shareholders have greater power and incentives to pursue value maximization by the management but on the other hand they might have different goals due to several reasons than a minority shareholder, which will adversely affect their wealth.

A lot of empirical research has been conducted on the impact of block holder ownership on corporate performance and corporate value but there is some dissent when it comes to the question of, which model is best to apply. Some researchers, like Gugler (2001) in Austria or Short (1994) in the US, applied *single regression models* in order to test for a coherence of ownership structure and firm accounting returns. Both found a weak positive relationship. Whereas other researchers, like Demsetz and Villalonga (2001), argued that a *simultaneous equation model* would suit the purpose best and found that there is no significant relation between ownership structure and firm performance. The latter model would imply that ownership structure is an *endogenous* variable and not *exogenous*, as long assumed. This leads to the *problem of endogeneity* of assumed independent variables, which I will address as another problem later in this thesis.

Table 3-1 shows a comparison of research that has been done on the relationship of ownership structure and firm performance measured either by Tobin's Q (Q) or the accounting returns. It distinguishes between single regression results, simultaneous equation results, panel data results and event study results.

Methodology (dependent variable)	Anglo-American evidence	Continental Europe
Single regression (accounting returns)	No systematic relationship Demsetz and Lehn (1985), Holderness and Sheehan (1988), survey by Short (1994).	No systematic relationship Bergström and Rydqvist (1990), Pedersen and Thomsen (1999). Positive relationship Gugler (1998, 2001) Kremp and Sevstre (2001) Non-linear Bianco and Casavola (1999)
Single regression (Q)	Non-linear relationship Morck et al., 1988. McConnell and Servaes (1990). Anderson and Reeb (2003) No systematic relationship Mehran (1995)	Positive (non-linear) effect Gorton and Schmid (2000) Edwards and Nibler (2000).
Simultaneous equations (Q)	No systematic relationship Cho (1998), Loderer and Martin (1997), Demsetz and Villalonga (2001). Himmelberg et al. (1999).	No systematic relationship
Panel data (Q)	No systematic relationship Himmelberg et al. (1999)	Negative effect Cronqvist and Nilsson (2003)
Event studies (risk-adjusted abnormal returns, etc.)	Positive effect Holderness and Sheehan (1985, 1989) Lewellen et al. (1985) Agrawal and Mandelker (1990) Barclay and Holderness (1991, 1992) Bethel et al. (1998) Negative effect Song and Walking (1993) Slovin and Sushka (1993)	No systematic relationship Eckbo and Smith (1998) Positive effect Renneborg (2000)

These studies use different ownership measures (blockholder ownership, officer and director ownership, insider ownership, share of largest owner, share of two largest owners, closely held shares, and the Herfindahl Index of Ownership Concentration).

Table 3-1: Source (Thomsen, Pedersen, & Kvist, 2005)

3.4.3.3 Institutional Investors

Institutional investors gained significant importance during the last decades as equity holders. Gillan and Starks (2003) show, that institutional investment grew from 6.1% of aggregate ownership of equities in 1950 to over 50% by 2002 in the United States. In the European Union assets held by institutional investors grew more than 150% between 1992 and 1999.

The main questions, which arise, are, if and how institutional investors serve as a monitoring mechanism in order to discipline the management and for what reason do they engage in that kind of activism.

Institutional investors like investment funds, pension funds, insurance companies, foundations and bank trust departments have basically three choices when they become not satisfied with a company's performance:

1. Exit – sell their shares
2. Voice – hold on to their shares and make use of their voting rights
3. Hold on to their shares and wait respectively do nothing

Which strategy the institutional investor pursues depends mainly on the size of the stake it holds in a company. If the size of the stake is too small there will be no incentive for the institutional investor to become an active monitor. This can be explained by the fact that the monitoring costs would simply exceed the benefits of monitoring. But since the stakes institutional investors held increased drastically over the last years also their role as passive shareholders changed. Although they could simply sell their stakes, the effect of selling large stakes would be disadvantageous to them since it would drive the market price down and incur further losses. Therefore institutional investors who hold large debt or equity had been motive to become active monitors and engage in interaction with the management. This would also be consistent with the common theory of free riding, which conveys that only a large shareholder has enough incentive to monitor a company's management and that all other minority shareholders prosper from that activity and do nothing.

Gillan and Starks (2003) speak of two ways how an institutional investor can influence the management's decisions, namely either by *direct* or *indirect* measures.

direct	**indirect**
Through ownership of shares – by exercising voice	Through trading of the shares – by influencing the market
	Through increasing the company's *cost of capital* – by collaborating with other institutional investors

Proponents of the monitoring effect of institutional investors deem that the monitoring effect *benefits all shareholders* and that it focuses on the *long term*, which as a consequence improves long term efficiency of a company.

Opponents of institutional activism argue that it is not a pension funds primary objective to monitor the management of other companies. It should concentrate on managing money for beneficiaries. They additionally deem that fund managers *lack the expertise* to be in the position to control the management and that there are *not enough incentives* for public fund managers to engage in a monitoring activity.

In the US, legislation limits pension and investment funds in their ability to control the management. Roe (1990) gives two reasons for the limitation:

1. Costs induced by legislation are too high in order to acquire a large stake, which would make it efficient enough for controlling the management
2. Legislation itself makes disciplinary measures costly

Clyde (1997) examined the effectiveness of shareholder activism by institutional investors in the US and came to the conclusion that US firms hold enough stakes to affect the managements decisions and that they managed to circumvent the legislation, which enabled the firms to hold more than 5% of a company's shares.

3.5 Run down of Corporate Governance

3.5.1 Academic Indices

3.5.1.1 The "G" Index

Gompers, Ishii and Metrick (2001) (2003) were the first economists, who devoted themselves to the question if a relation between firm-level corporate governance and corporate performance exists. In order to deal with this question properly they had to find a way to reduce the manifold factors of corporate governance into a single number. Therefore they combined a large set of governance provisions into a Governance (G) index which should act as a proxy for the strength of shareholder rights. The data they used had been taken from

publications of the Investor Responsibility Research Center (IRRC) along with the 24 corporate governance provisions. The sample contained approximately 1500 large US firms since the year 1990. The 24 *unique* provisions were divided into five subsets. Figure 3-3 shows a detailed list of the five subsets with the respective provisions.

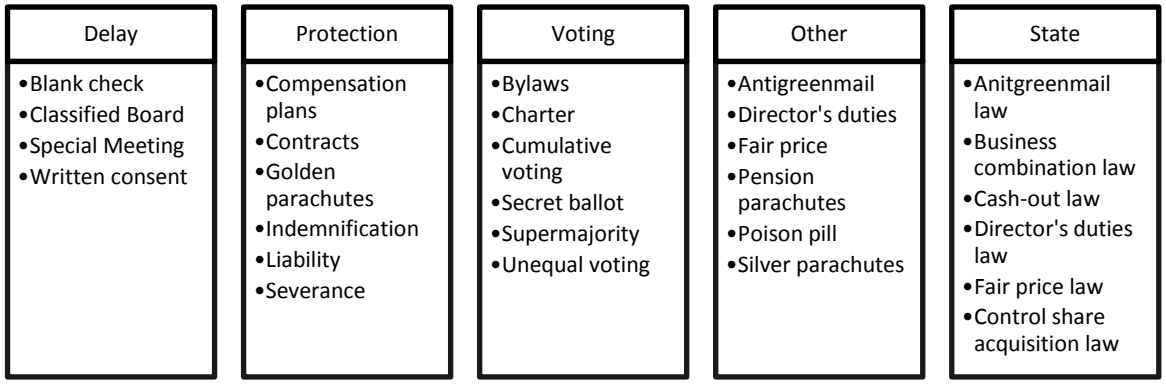


Image 3-3: Corporate Governance Provisions, Source: (Gompers, Ishii, & Metrick, 2003)

They constructed the index by awarding one point for each provision that reduces the rights of a shareholder in the particular firm. The sum of all the awarded points represents the G-index and the firms with the most points were placed in the "Dictatorship portfolio" and the firms with the least points were placed in the "Democracy portfolio". Thus the "Dictatorship portfolio" ($G \geq 14$) contained all the firms with the least shareholder protection whereas the "Democracy portfolio" ($G \leq 5$) contained all the firms with the highest shareholder protection.

	1990	1993	1995	1998
Governance Index				
Minimum	2	2	2	2
Mean	9.0	9.3	9.4	8.9
Median	9	9	9	9
Mode	10	9	9	10
Maximum	17	17	17	18
Standard Deviation	2.9	2.8	2.8	2.8
Number of Firms				
G≤5 (Democracy Portfolio)	158	139	120	215
G=6	119	88	108	169
G=7	158	140	127	186
G=8	165	139	152	201
G=9	160	183	183	197
G=10	175	170	178	221
G=11	149	168	166	194
G=12	104	123	142	136
G=13	84	100	110	106
G≥14 (Dictatorship Portfolio)	85	93	87	83
Total	1357	1343	1373	1708
Subindex Means				
Delay	1.8	2.0	2.1	2.1
Protection	2.4	2.5	2.5	2.1
Voting	2.2	2.1	2.1	2.2
Other	1.1	1.2	1.1	1.0
State	1.8	1.8	1.8	1.7

G-index, Source: (Gompers, Ishii, & Metrick, 2003)

In the subsequent steps GIM regressed their G-index against various measures of corporate performance, such as book-to-market ratio, firm size, share price, monthly trading volume, Tobin's Q, dividend yield, S&P 500 inclusion, stock returns, sales growth and percentage of institutional ownership. They found a significant negative correlation of the G-index and Tobin's Q and stock returns. This means that firms placed in a "Dictatorship portfolio" systematically show a lower Q and lower stock returns than firms which are placed in a "Democracy portfolio". GIM themselves pointed out that the existence and proof of a relationship between their index and corporate performance does not explain causality. They then provided three hypotheses as feasible explanations for their observation:

- **Hypothesis 1:** Governance provisions are costly (additional agency costs) and were underestimated by investors in 1990.
- **Hypothesis 2:** Agency costs are not affected by the provisions, instead managers, who expected poor performance in the 1990s installed some provisions in the 1980s in order to reduce the shareholder's rights.
- **Hypothesis 3:** Agency costs are not affected by the provisions and the abnormal returns in the 1990s are correlated with other unknown characteristics.

After testing of the Hypotheses GIM found some evidence in support for Hypothesis 1 but no evidence in support of Hypothesis 2. In addition they stated that Hypothesis 3 could explain the abnormal returns by industry classification, but no other possible characteristics, which could explain the abnormal returns, were found.

Concluding GIM repeats their finding of a strong correlation of corporate governance and stock returns respectively Tobin's Q. Furthermore the pointed out that they had found no way in proving causality and that their results might have been driven by some unobservable firm characteristic.

3.5.1.2 The "E" Index

Bebchuk, Cohen and Ferrell (BCF) (2004) followed Gompers's et al. (2001) notion and improved the "G index" from their point of view in several ways. The data they had used contained between 1400 and 1800 firms in the period from 1990 to 2002. They adopted the 24 provisions of the IRRC and conjectured that these 24 provisions contained errors, which they referred to as "noise". Some provisions might be irrelevant at all, some might be positively

correlated with firm value or some might be even endogenous. After testing the provisions both individually and aggregate, BCF come to the result that only six of the twenty-four provisions are significant and negatively correlated with firm value respectively Tobin's Q and the firm's stock return.

6 Provisions
• Staggered board • Limits to amend bylaws • Limits to amend charter • Supermajority • Golden parachutes • Poison pill

BCF's six significant provisions

After the determination of the relevant provisions BCF created their own index and named it entrenchment index (E index). Each firm gets one point awarded if a provision is met and zero if a provision is not fulfilled. Therefore the firm's scores ranged from 0 to 6. Then they ran annual regressions of each firm's E index (independent variable) against the firms Tobin's Q and the log of industry adjusted Q (dependent variable).

One might get the intuition that the intention of their work was twofold. On the one hand they tried to enhance or criticize GIM's G index and enrich economic literature with a new perspective but on the other hand they constructed portfolios and provided strategies. This makes the second intention of their work obvious, namely the provision of an easy to apply index for renowned shareholder advisory institutions in order to rank other companies in respect to their Corporate Governance provisions. It remains questionable whether it is appropriate or not to provide strategies and indicators of Corporate Governance in a case where BCF themselves highlight the fact that their work shows a correlation of the six provisions and firm value but does not provide any information about *causality*. According to BCF the issue of simultaneity is notoriously difficult to resolve. A Firm which is dependent on the ratings of advisory institutions might adapt to the wrong provisions in order to achieve a better rating and that as a consequence might have adverse effects on the firm's performance itself.

Concluding BCF point out that their work is superior to the work of GIM by only using a few provisions, which lowers the risk of the variables to be endogenous and to interfere with each other. They encourage shareholders and their advisors to pay attention to the provisions that really matter.

3.5.1.3 The Gov-Score Index

The index, which Brown and Caylor (2006) constructed is based on 51 provisions, which represent firm specific internal and external governance provisions. The data the authors used had been taken from the Institutional Shareholder Services (ISS) containing 1868 firms in the year 2003. They state that the ISS data is superior to the data, GIM or BCF used from IRRC, in the way that it considers both internal and external governance provisions whereas IRRC only considers external factors. The creation of the Gov-Score index follows the guideline of its predecessors. It resembles the sum of points for each firm, whereas one point (1) is awarded if a provision is met and no point (0) is awarded if a provision is not met. The authors use three approaches in order to investigate a relation of the provisions and Tobin's Q:

1. ALL approach
2. BCF approach
3. STEP approach

In the *ALL approach* the authors regressed Tobin's Q on all 51 provisions and find that *six governance provisions* are *significant positively* related to it.

The *BCF approach* is named after its originators Bebchuk, Cohen and Ferell, who regressed Tobin's Q on the G-index minus the questionable factor in order to evaluate each factors importance. Brown and Caylor use the same approach as BCF but they replace the G-index with their Gov-Score index and find *nine governance provisions* which are significant and positively related with Tobin's Q.

In the *STEP approach* the authors make use of a stepwise regression in order to find individual ISS factors, which are connected to firm value.

ALL 6 provisions	BCF 9 provisions	STEP 6 provisions
•board members are elected annually •no poison pill or a poison pill shareholders approved •no option re-pricing within last three years •directors are subject to stock ownership guidelines •all directors attended 75% of board meetings or had a valid excuse •the average options granted in the past 3 years as percentage of basic shares outstanding did not exceed 3%	•6 provisions of ALL approach plus 3 new provisions •board guidelines are in each proxy statement •option re-pricing is prohibited •board has outside advisors	•the average options granted in the past 3 years as percentage of basic shares outstanding did not exceed 3% •board guidelines are in each proxy statement •board members are elected annually •no poison pill or a poison pill shareholders approved •no option re-pricing within last three years •nominating committee is comprised solely of independent outside directors

By combining the four factors, which all three approaches have in common and three other factors the authors formed a new and improved slim version of the Gov- Score index, which they named Gov-7 index. This new Gov-7 index is therefore based on two external and five internal governance provisions and should be able to fully replace the validity of the Gov-Score index. They proved this by regressing Tobin's Q on the Gov-7 index and showed that a significant positive correlation between Tobin's Q and the index existed.

Brown and Caylor as well address the issue of possible endogeneity and state that one can never be sure of the direction of causality, especially in their case where only one year of data is available.

3.5.2 Institutional Index

According to Bhagat, Bolton and Romano (2007) commercial indices, which advisory institutions provide, differ from the academic indices in four ways.

1. Institutions do not use equally weighted factors. Instead they use factors weighted according to their own perception of importance.
2. Institutions rebut the importance of takeover defenses, which is opposed to the opinion of BCF and GIM.
3. Some commercial indices are relative inter-firm rankings in their respective industry, whereas academic indices are absolute rankings in respect of their governance quality.
4. The factors institutions apply are subject to corporate governance trends.

It is obvious that academic and commercial indices pursue different goals. The latter aims at the disposal of an index, which is based on practical expertise by the choice of individual weights suiting the momentary situation. Whereas the academic index aims at the disposal of a generally applicable index for the sole purpose of understanding and recognizing possible relations.

3.5.3 Criticism

Bhagat, Bolton and Romano (BBR) (2007) criticize GIM, BCF and Brown & Caylor in their working paper "The promise and peril of Corporate Governance Indices". Their issues of criticism can be summed up in four main categories:

1. The *robustness* of the relation of corporate governance and performance is questionable
2. Econometric issues: *Endogeneity* of the two variables
3. Comparing the relative performance of governance indices and single attributes of governance in predicting future performance
4. Comparing the relative performance of governance indices and single attributes of governance in predicting management turnover after poor performance

First, addressing the issue of robustness, Bhagat et al. name *three* studies, which deal with the question if GIM's finding of a relation between corporate governance and performance, holds. The *first study* was conducted by Lehn, Patro and Zhao (2006) who examined and controlled

the period from the early 1980s till the end of 1990s by comparing the valuation multiples of 1980s to the ones of 1990s. They find a correlation of the 1980s valuation multiples with the multiples of the 1990s and a correlation of the 1980s multiples with the 1990s corporate governance indices. These findings substantiate their hypothesis that causation runs from performance to governance and not the other way around. The *second study* was carried out by Core, Guay and Rusticus (2004) who conclude after their testing that there is no evidence that poor (good) governance causes poor (good) performance. The *third study* has been undertaken by Cremers and Nair (2003) who emphasize that not only external governance mechanisms matter but also internal mechanisms. They find that no single governance mechanism affects performance, but specific combinations of internal and external governance mechanisms do.

Second, addressing the econometric issues, Bhagat et al. state, that for purposes of economic significance, it has to be ensured, that corporate governance and performance are independent from each other. In order to achieve this they propose to formulate a system of simultaneous equations.

4. Conclusion

Before writing this thesis I had an initial concept in my mind, which was to present how difficult it is to determine if corporate governance exerts influence on corporate performance or not. But over the course of writing the thesis and during the dissection of corporate governance and valuation, the results of how many problems and inconsistencies actually exist in these fields, surpassed my boldest expectations.

In nearly every aspect of the investigated subjects, let it be in corporate valuation or in corporate governance, a lot of differences of opinion appeared.

First, regarding corporate valuation, it is quite unclear which valuation method or approach represents the true value of a company. Despite the fact that the course of valuation itself is clear, it is quite unclear which of the methods to apply. Is it appropriate to choose an approach, which is oriented at market values, reference values, book values or which is oriented at a performance measure such as Tobin's q? A lot research has been undertaken using Tobin's q as the relevant indicator for a company's performance. However, even here discordance dominates about the proper use of Tobin's q. Is it preferable to use the average q or the marginal q? Although the latter clearly has its advantages and seems more appropriate, it is still the average q that finds more application in economic publications.

Second, taking a deeper look at corporate governance, it becomes even more obvious how split and at strife opinions are. This is probably based on the manifold factors, which are related to corporate governance and the different notions in respect to the influence of each or all the factors together on corporate performance. The topic of causality and endogeneity of the factors plays an important role in the question of how reliable the findings, presented in this thesis, are. Despite the importance of endogeneity for economic inferences, often quoted researchers, like Gompers et al. and Bebchuk et al., emphasize in their works, that it is not possible to provide a statement about causality after all.

Third, the reduction of corporate governance factors into a single number and the proper selection of these has earned due criticism, despite its great acceptance in academic and professional circles. Bebchuk and Hamdani (2009) in their recent work, along with other economists, criticize the premature use of indices both by academics and by practitioners. They warn about the adverse effects a single metric, as an indicator for governance quality respectively as a basis for investment choices, could bring about. Especially in the case, if

these indicators do not respect the differences and consequences, which arise if one does not account for the two different kinds of ownership structures. They state that it is impossible to create a universal index, which measures governance quality, for both countries with dispersed ownerships and countries with concentrated ownerships. Concluding Bebchuk et al. highlight the impending dangers by adapting and following the requirements of institutional advisers, such as RiskMetric, who was formally known as Institutional Shareholder Service (ISS) and who possesses unbelievable impact on the market by serving over 1150 institutions.

This raises the question, whether it is beneficial or not that institutional advisers or rating agencies exert such influence on the market despite knowing that their advice is not scientifically profound in many aspects? I would suppose that it is not.

First, firms might adapt to guidelines or requirements, which were imposed by rating agencies only due to the reason of being attractive for the market by having a good rating. On the contrary these requirements might even have adverse effects on the firm's performance.

Second, Kuhner (2001) provides several additional reasons why one needs to exercise caution when relying on institutional advisers.

- **Power without accountability**: rating agencies possess a lot of influential power on markets, but they are in no way liable and accountable for their advice and ratings.
- **Conformity bias**: rating agencies rarely assign divergent ratings for an affiliated group of companies (colluding behavior).
- **Sociocultural bias**: Ratings in favor of Anglo-American companies to the detriment of companies of other countries.
- **Punishment of "disobedient" firms**: Rating agencies provide ratings in absence of a specific request for a such. There is evidence that these ratings are mostly disadvantageous for the rated company to exert pressure on it.
- **Procyclical bias**: Rating agencies do not release any warning signals in time of turbulences. They follow the market's opinion and only when the crisis is spreading they start to downgrade the concerned companies.

Summarizing all the facts and circumstances, it is doubtful that any specific inference about an existing relationship of corporate governance and corporate performance is appropriate as matters stand at present. There are still too many unresolved questions and problems, which need to be reconsidered closely. Companies need to be very careful if they decide to adapt to Corporate Governance guidelines, which rating agencies or others provide. The adaption to these guidelines will most certainly entail adverse effects for the company's shareholders because they are not a scientifically proven yet. It is possible that each company requires the application of its own corporate governance measures to achieve an optimal firm performance. A generalization is neither possible nor advisable.

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